

## AMBULATORY HANDHELD ELECTRONIC DEVICE

## ABSTRACT OF DISCLOSURE

A handheld device (100) comprises a plurality of ambulation mechanisms (222-224, 1002-1008) that enable the handheld device (100) to perform translations, rotations or compound movements on a surface (502) on which the device (100) is placed. Using the ambulation mechanisms (222-224, 1002-1008), the device (100) is able to communicate the occurrence of various events to a user via ambulation gestures that are recognized by the user. Ambulation gestures can be programmed by the user. Disclosed ambulation mechanisms (222-224, 1002-1008) comprise linear (302, 700, 800) or rotary (1018, 1102) vibration transducers that are mechanically coupled to elastic feet (226-228, 606-608, 1110) that have an asymmetric tread (402). The asymmetric tread (402) is effective to convert vibration generated by the vibration transducers (302, 700, 800, 1018, 1102) to movement forces tangential to the surface (502) on which the device (100) is placed.